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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 964,837	09 26 2001	Hiroyoshi Tanaka	NAK1-BB92b	3480

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2100 S.E. Main Street
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EXAMINER

RAMSEY, KENNETH J

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 06 04 2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/964,837

Applicant(s)

TANAKA ET AL.

Examiner

Kenneth J. Ramsey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 13 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 49-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 49-61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 58 and 60 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 5 of U.S. Patent No. 6,540,576 in view of Yano 5,907,311. Patent claim 5 discloses a method of forming the walls of a plasma display panel by thermal spraying an insulation material onto areas of a substrate not covered by a photo resist and then removing the photo resist. It is not disclosed that the substrate is the cathode substrate or that the cathode lines and a dielectric layer are formed prior to forming the partition walls or that the partition walls separate the anode substrate and cathode substrate and form discharge spaces there between. It

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well known that the partition walls of a plasma display separate the anode and cathode substrates to form the discharge spaces of a plasma display. Also, as shown by Yano, column 5, lines 64-65 and column 9, lines 7-22, it is common to form the partition walls 110 on the cathode substrate and to include a dielectric layer 132 and protective layer 133 to prevent deterioration of the electrodes due to ion sputtering caused by the plasma discharge. It would have been obvious to one of ordinary skill in the art at the time of applicants' invention to form the walls of patent claim 5 on the cathode substrate and to include a dielectric layer and protection layer to prevent deterioration of the discharge. Further, it would have been obvious to form the partition walls on the cathode substrate since Kamegaya teaches the depositing of the cathode lines on a cathode substrate by plasma spraying and it would therefore be obvious to include the same plasma spraying means to further provide the partition walls.

Claim 59 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 5 of U.S. Patent No. 6,540,576 in view of Yano as above taken further in view of Kamegaya et al 4,554,482 (Kamegaya). Claim 59 adds the limitation that the partition walls are formed of e.g. aluminum oxide. Kamegaya, column 2, lines 46-65, discloses and column 3, lines 33-38, discloses in an analogous process the forming of a cathode substrate including the deposition of both conductive and insulative materials by plasma spraying in order to deposit these materials without excessively heating the substrate. Since aluminum oxide is a well known insulator, and because it is known from Kamegaya that aluminum oxide can be

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deposited by plasma spraying, it would have been obvious to one of ordinary skill in the art at the time of applicants' invention to use aluminum oxide as the insulation material in the step of forming partition walls as per patent claim 5 as above modified by Yano.

Claim 61 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 5 of U.S. Patent No. 6,540,576 in view of Yano 5,907,311 as above taken further in view of and Parodos (5,457,356) and Miwa (5,851,939). Claim 61 adds the limitation that the glass substrate is a borosilicate glass including 6.5 percent or less alkali. Miwa teaches the use of a alkali free borosilicate glass as the substrate of a display since the alkali components of a glass substrate tend to deteriorate the properties of adjacent layers including semiconductor elements. Parodos teaches the use of semiconductor elements, flip chips, bonded to a display substrate to drive a display which may be a thin film electroluminescent display, a liquid crystal display, a plasma display or a field emission display. See the abstract. Further, column 5, lines 10 to 13 of Parodos indicate that the substrate is preferably Corning 7059 barium-borosilicate glass which is a known alkali free borosilicate glass. It thus would have been obvious to one of ordinary skill in the art at the time of applicants' invention to form the plasma substrate of patent claim 5 as modified by Yano from low alkali (e.g. alkali free) borosilicate glass since it is known to include semiconductor elements on a plasma display substrate to drive the display and that the alkali components of a substrate could deteriorate the semiconductor elements.

Prior Art Rejections

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 49-53 are rejected under 35 U.S.C. 102(b) as being anticipated by Ushifusa et al 5,818,168 (Ushifusa). Ushifusa, column 9, lines 20-25, and column 9, line 66 through column 10, line 2, discloses the forming of a dielectric layer including an aluminum compound over the electrodes of a plasma display panel plate by a CVD vacuum deposition process to provide the dielectric using a process that does not excessively heat the substrate as per column 9, lines 43-52, to protect the color filter. The plate is later placed in parallel with a second plate with spacing means in between to form a discharge space. As to claim 51, Ushifusa, column 5, lines 28-35, teaches forming a protective magnesium oxide layer over the dielectric layer.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 54 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ushifusa in view of Parodos (5,457,356) and Miwa (5,851,939). Claim 54 adds the limitation that the substrate is made of borosilicate glass including 6.5 percent or less by weight alkali. Miwa teaches the use of a alkali free borosilicate glass as the substrate of a display since the alkali components of a glass substrate tend to deteriorate the properties of adjacent layers including semiconductor elements. Parodos teaches the use of semiconductor elements, flip chips, bonded to a display substrate to drive a display which may be a thin film electroluminescent display, a liquid crystal display, a plasma display or a field emission display. See the abstract. Further, column 5, lines 10 to 13 of Parodos indicate that the substrate is preferably Corning 7059 barium-borosilicate glass which is a known alkali free borosilicate glass. It thus would have been obvious to one of ordinary skill in the art at the time of applicants' invention to form the plasma substrate of patent claim 5 as modified by Yano from low alkali (e.g. alkali free) borosilicate glass since it is known to include semiconductor elements on a plasma display substrate to drive the display and that the alkali components could deteriorate the semiconductor components.

Claims 55 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ushifusa in view of Kamegaya. Ushifusa, column 9, lines 20-25, and column 9, line 66 through column 10, line 2, discloses the forming of a dielectric layer

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including an aluminum compound over the electrodes of a plasma display panel plate by a CVD vacuum deposition process to provide the dielectric using a process that does not excessively heat the substrate as per column 9, lines 43-52, to protect the color filter. The plate is later placed in parallel with a second plate with spacing means in between to form a discharge space. As to claim 56, Ushifusa, column 5, lines 28-35, teaches forming a protective magnesium oxide layer over the dielectric layer. Ushifusa differs in that claim 55 recites that the dielectric layer is formed by plasma spraying an insulator layer. Kamegaya, column 2, lines 46-65, discloses and column 3, lines 33-38, discloses in an analogous process the forming the a cathode substrate including the deposition of both conductive and insulative materials by plasma spraying in order to deposit these materials without excessively heating the substrate. Since it is known from Kamegaya that insulator material of a plasma display can be deposited by plasma spraying without excessively heating the substrate, it would have been obvious to one of ordinary skill in the art at the time of applicants' invention to use plasma spraying in the step of forming the dielectric layer of Ushifusa to protect the substrate thereof from excessive heating because a plasma spraying process does not require working with chemical solutions or the use of expensive apparatus.

Claim 56 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ushifusa and Kamegaya as applied to claim 55 above, and further in view of Japanese patent, JP4-07-105855. Claim 57 specifies that the dielectric layer is formed of a lead oxide base material containing particular additional oxides. The

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Japanese patent discloses the use of this glass to form the dielectric layer of a plasma display. Since this glass has a low melting point and Ushifusa desires to avoid a high temperature treatment in order to protect the color filters, it would have been obvious to one of ordinary skill in the art to employ the low melting glass of the Japanese patent as the material of the plasma spray process of Ushifusa as above modified by Kamegaya.

1. Claim 57 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ushifusa and Kamegaya as applied to claim 55 above, and further in view of Parodos (5,457,356) and Miwa (5,851,939). Claim 54 adds the limitation that the substrate is made of borosilicate glass including 6.5 percent or less by weight alkali. Miwa teaches the use of a alkali free borosilicate glass as the substrate of a display since the alkali components of a glass substrate tend to deteriorate the properties of adjacent layers including semiconductor elements. Parodos teaches the use of semiconductor elements, flip chips, bonded to a display substrate to drive a display which may be a thin film electroluminescent display, a liquid crystal display, a plasma display or a field emission display. See the abstract. Further, column 5, lines 10 to 13 of Parodos indicate that the substrate is preferably Corning 7059 barium-borosilicate glass which is a known alkali free borosilicate glass. It thus would have been obvious to one of ordinary skill in the art at the time of applicants' invention to form the plasma substrate of patent claim 5 as modified by Yano from low alkali (e.g. alkali free) borosilicate glass since it is known to include semiconductor elements on a plasma display

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substrate to drive the display and that the alkali components cause deterioration of the semiconductor elements.

Allowable Subject Matter

No prior art rejection is applied to claims 58-61 since the prior art of record does not teach or suggest the invention as claimed including the forming of partition walls of a plasma display from a plasma sprayed material. .

Directions for Responses

Any inquiry concerning this communication should be directed to Kenneth J. Ramsey at telephone number 703-308-2324.

Kenneth J. Ramsey
Primary Examiner
Art Unit 2879

Kjr